stated, there is little to say about the mining operations, so-called. All is in the open. The hill-side is broken out by blasting, the ore is sorted by hand, and is then carried down to the ships in buckets on an aërial railway of wire rope, or by trucks running on inclines. In the level parts near the river locomotives are used, but the great motive power is supplied by the gravity of the material itself.

After leaving the anchorage off the Bilbao River, the *Ormuz* proceeded to Santander, where excursions were made ashore. From thence she went to San Sebastian, where members were landed, and explored the neighbourhood. Finally, the ship was anchored off St. Jean de Luz, from whence Biarritz and Bayonne were visited, and finally the *Ormuz* reached Tilbury once more on Saturday morning, September 12, after having had a most successful fortnight's voyage.

NOTES.

Letters have been received from Prof. Sollas, by the Chairman and Secretary of the Coral Reef Boring Committee of the Royal Society, which show that, so far as the main object of the expedition is concerned, the effort has been an almost complete failure. When the party had landed on Funafuti from the *Penguin*, they selected the most promising site, as it appeared, for a bore-hole. The apparatus was landed and set up, and a bore-hole carried down to a depth of about 65 feet, when further progress became impossible, for material like a quicksand was struck which choked the bore-hole. Very little solid coral rock was pierced. To pass over the steps then taken, it may be enough at present to say that another attempt was ultimately made nearer to the edge of the island, where there appeared some hope of finding more solid coral rock. This boring was carried down to 72 feet, and then similar difficulties prevented further progress. The material struck was a kind of quicksand containing "boulders" of coral. As fast as the sand was got out, fresh material poured in, and the water pumped down the tube, with a view of cleaning it, actually flowed out into the surrounding bed, while the coral boulders made it impossible to drive the tubes through the quicksand. So far as the reef was pierced it appeared to be not solid coral, but more like a "vast coarse sponge of coral with wide interstices, either empty or sand-filled." It is very unfortunate that the efforts of the Royal Society, and the liberal aid of the Admiralty and of friends and authorities in Sydney, should be so ill-rewarded; still, though the expedition has failed in its main object, it has met with great success in all the others. Large collections have been made: Messrs. Gardiner and Hedley have thoroughly investigated the fauna and flora, both land and marine, of the atoll. Dr. Collingwood has obtained information of ethnical interest, and Captain Field a series of soundings, both within and without the atoll, which Prof. Sollas states are more complete than have yet been obtained, and must greatly modify our views as to the nature of coral reefs. Of all these matters it would be premature to speak, till Prof. Sollas has returned and been able to give fuller particulars, and Captain Field has reported to the Admiralty.

The International Congress of Meteorology is meeting this year at Paris, under the presidency of M. Mascart. Several committees or sections have been appointed. One of them has discussed the expediency of an international system of observations to be carried on jointly with the national system. Another has considered the desirability of more frequent international signals, so as to give warnings of storms. The difficulty of delaying the regular traffic was urged as an obstacle, and the section, while desiring a system of circular telegrams at a fixed hour between the national central offices, pronounced in favour of the reception of local reports at each central office in time for international exchanges by 1 o'clock a.m., Greenwich time. Among the proposals made at the Congress is one for the establishment of a station on the coast of Finland, which would issue reports on the break-up of the ice, the movements of icebergs, marine currents, and the prospects of fisheries.

The Home Secretary has appointed Mr. Thomas Pickering Pick to be the Inspector of Anatomy for the Provinces, in place of Mr. John Birkett, resigned.

The sixty-eighth annual meeting of the Association of German Men of Science and Medical Men is at present taking place at Frankfort-on-Main. Among the addresses to be delivered during the gathering are:—"Biology and the Science of Health," by Prof. Buchner, of Munich; "The Practical Aims of Military Hygiene," by Dr. Below, of Berlin; and "New Questions in Pathological Anatomy," by Prof. Wiegert, of Frankfort-on-Main. Among the discussions is one on "The Results of Recent Investigations on the Brain," to which Prof. Flechsig, of Leipzig, will contribute a paper on "The Localisation of Mental Processes"; Prof. Edinger, of Frankfort, one on "The Development of the Brain Paths in Animals"; and Prof. von Bergmann, of Berlin, one on "Tumours of the Brain."

We are sorry to learn, from the *Ceylon Observer*, that Dr. Trimen, the Director of the Ceylon Botanical Gardens, is somewhat seriously ill.

The death is announced, from Paris, at the age of seventy-seven, of M. Hippolyte Fizeau. M. Fizeau was a member of the Academy of Sciences, and an authority on the velocity of rays of light and of electrical currents.

We regret to have to record the death, at the age of forty-five, of Dr. G. Brown Goode. He died at Washington, September 6. Dr. Goode was a Member of the National Academy of Sciences, and one of the original Fellows of the American Association for the Advancement of Science at the time of incorporation of the latter in 1874, and had, as our readers will remember, just been elected Vice-President of the Section of Zoology at the Buffalo meeting.

The death of Dr. Goode, and the absence of Prof. Langley from the United States, prevented the fiftieth annual meeting of the trustees of the Smithsonian Institution (which was to have been held on September 7) from taking place. This was the first time in the existence of the Institution that the annual meeting had failed to be held.

News has been received of the massacre, on August 10, by natives of Guadalcanar of the Solomon Islands, of a portion of a party, detached from the Austrian war vessel *Albatross*, for purposes of scientific research. It is reported that Baron Foullon, a geologist, a midshipman and two sailors were killed, and six others wounded, four seriously. Efforts made by the British Resident to recover the dead bodies were unsuccessful.

A Reuter telegram from St. Petersburg, dated September 17, states that a telegram from Vladivostok announces that the expedition for the exploration of Kamtchatka, under MM. Bogdanovitch and Lemiakin, has made a thorough survey of the district between Chumikan and Ayan, discovering some rich gold-fields of considerable extent. Gold of remarkably good quality has been discovered in fourteen places in volcanic strata on the banks of the river Aikashra.

The correspondent of the *Standard* at Rejkjavik, writing on September 11, gives an account of the recent earthquakes in Iceland. The first shock occurred on the evening of August 26, and it was followed by another, somewhat less severe, the next morning. These shocks were felt over the whole south-west of the island, but were most violent in Rangarvalla Syssel, which lies directly to the south of Hecla. In this district, fifty-five badly-built farmhouses were destroyed, but no lives were lost. Occasional tremors were felt during the following days, but none of any severity until the night of September 5, when there was another violent shock. In this the epicentre was displaced to the west, Rangarvalla Syssel was but little affected, and most damage was done in Arnes Syssel. Here more than one hundred farmhouses were destroyed or seriously damaged, and two persons were killed. Four hours later another strong shock was felt, and since then there have been frequent tremors, but none of sufficient strength to do further damage. No eruption has taken place, and no signs of an incipient eruption are visible. The Great Geyser, being at some distance from the epicentre, showed little change except a temporary increase of energy. But in several other places hot springs had dried up, while at one or two points fresh boiling springs have made their appearance.

According to mail advices from Rejkjavik, received on September 21 in Copenhagen, two fresh shocks of earthquake occurred in the south-west of Iceland on the night of the 6th, and at one place an old couple were killed by the roof of their house falling in. It is stated that 155 farmsteads were destroyed during the recent earthquakes. To the fund that is being raised in Denmark for the victims, the Tsar has subscribed 4000 kronen, and the Dowager Empress of Russia 3000, while donations of 2000 and 1000 kronen have been given by the King and Queen of Denmark.

The *Athenæum* states that a new Alpine meteorological station, corresponding to that on the summit of the Säntis, is to be erected on the Rochers de Naye. President Ruffy and Prof. Hagenbach-Bischoff, of Bâle, members of the Swiss Federal Meteorological Commission, are at present searching for a suitable site for the erection of the building.

With reference to the note appearing in these columns of September 3, respecting the finding of gold in Newfoundland, a telegram from St. John's announces that an analysis from a London firm shows that the bed-rock under the quartz yields 8 dwts. 12 grs. of gold per ton, while the quartz itself yields 3 ozs. per ton. The bed-rock is said to be of unlimited extent, and only one vein of quartz has yet been worked.

Mr. George J. Gould, of New York, has recently returned from a tour in Arctic waters in his private yacht. He has decided, it is said, on an elaborate and systematic scheme of exploration, which includes the building of a permanent depôt at some point always accessible during the season of navigation, and the sending of supplies to it every year. A cordon of depôts will be established at points further north from year to year, and will be permanently equipped and maintained till the Pole has been reached.

Our American correspondent, writing on September 11, says that elaborate experiments in aërial locomotion are in progress at Dune Park, Northern Indiana, near Lake Michigan, under the direction of Mr. Octave Chanute. The experiments began two months ago. Since then the machines have been reconstructed. Mr. A. M. Hering is assisting Mr. Chanute, and has invented a regulator which is attached to the apparatus. Beginning about September 1, about seventy-five flights have been made without a bruise or a break. A distance of 300 feet has been covered, at the height of about 30 feet from the ground, with less jar and shock than a ride in a rubber-tyred carriage. Two men carry the apparatus up the sand-hill. About 35 feet up, the machine is lifted, and Mr. Hering fits himself under it, and allows the wind to raise it. His arms fall over the bars provided. He makes two or three quick steps towards the lake, and the machine soars from the ground and darts through the air with a velocity described as rivalling that of an express train. The motion is horizontal, without any swaying motion. To stop the machine, the operator moves his body enough to tilt the apparatus slightly upwards in front, when it coasts gradually and slowly to the ground. The experiments of September 10 were considered unusually favourable, because made under somewhat adverse conditions. In a strong wind, the aëroplane soared suddenly and unexpectedly, carrying with it four operators who were holding the ropes, and lifting them 100 feet into the air. The combined weight of the four brought it down again soon without accident; whilst the performance of the machine in this emergency was peculiarly gratifying to the inventor. The apparatus is modelled after the general form of an albatross, but has seven wings. A very elaborate machine, constructed on a different principle by Mr. Paul, was to be tested on September 11, if favourable conditions prevailed, and some extraordinary results were anticipated. This machine has four corners which rest upon a chute, the upper end of which is 90 feet from the ground, and the lower end 77 feet above the lake level.

We learn from *Science* that the ironwork of the dome of the Yerkes Observatory is in position, and the lenses, now in the hands of Mr. Alvan Clark, will, it is hoped, be ready to be moved before the coming winter. The dome is 110 feet high, 90 feet in diameter, and weighs 200 tons.

Sir William Herschel's system of identifying persons by thumb-marks has been introduced experimentally into Bengal. The chief object of the measure appears to be to identify Government pensioners, and to make it impossible for persons to impersonate them.

According to the *Lancet*, a new medical journal is likely to be started in Scotland in the coming year. A committee on the subject has been formed by members of the profession, and has been for some short time actively engaged in making inquiries as to the probable success of the proposed journal, and discussing arrangements. What the proposed arrangements and scope of the enterprise are, have not yet transpired.

A new journal, entitled *Revista Trimestral Micrografica*, is to be published, under the editorship of Prof. S. Ramon Y. Cajal, of Madrid.

Dr. R. H. Traquair will deliver the Swiney course of lectures on "The Geological History of Vertebrate Animals," in the Lecture Theatre of the South Kensington Museum, on Mondays, Wednesdays, and Fridays, beginning Monday, October 5, and ending Friday, October 30. There will be twelve lectures in all, and admission will be free.

The lecture arrangements at the Royal Victoria Hall, Waterloo Bridge Road, for the month of October are as follows:—October 13, "Arabia," by Mr. Theodore Bent; October 20, "Chronicles of a Clay Cliff," by Mr. W. H. Shrubsole; October 27, "The Great Barrier Reef of Australia," by Mr. R. Kerr.

Offices for the identification of criminals under the Bertillon system have been established in Ceylon, at Colombo, Kandy, Galle, Kurunegala, and Ratnapura. The authorities, however, seem to have some difficulty in finding constables sufficiently accurate and delicate in their touch, and of enough education to undertake the work. Of those put into training only a limited number eventually qualify. In the recently published administrative report, mention is made of the following curious effect of the system. A number of habitual criminals of Colombo, who object to being identified, have left the town.

An international exhibition will, as was briefly announced in Nature of August 13, be held in Brisbane in 1897. The Government of Queensland has granted its official patronage to the undertaking, and Sir Arthur Hunter Palmer has accepted the office of President. The exhibition is to be opened on May 5, and will remain open for about three months. Its objects, as described in the prospectus issued by the acting Commissioner in London, are: "To promote and foster industry, science, and art, by inciting the inventive genius of our people to a further improvement in arts and manufactures, as well as to stimulate commercial enterprise by inviting all nations to exhibit their products, both in the raw and finished state. Samples of the products for which this and the other Australasian colonies have become famous will be exhibited, with a view to increase the development of their natural resources."

THE French Congress of Medicine is to be held during the Easter holidays of 1898 at Montpellier, under the presidency of Prof. Bernheim, of Nancy. The questions proposed for discussion are: (1) The clinical forms of pulmonary tuberculosis, (2) microbic associations and mixed infections, (3) therapeutic use of organs with internal secretion.

THE novelty of the idea of trying to reach the North Pole in a balloon seems to have worn off to some extent, so that there is a good chance now for a new suggestion. For this one has not had very long to wait, since the latest seems to be to make the attempt in a submarine boat. There is, however, as far as we know, no one at present who is going to make this perilous journey; but it is only the idea that has been suggested. The author of this is M. G.-L. Pence, and his views on the subject will be found in the *Revue Scientifique* (No. 12). Evidently this method of reaching the pole was brought home to him after having read that Nansen had found no shallow soundings above a certain high latitude. Relying on this fact and another, viz. that the polar seas are not entirely covered with ice throughout their length and breadth, but are here and there open to some extent, he suggests that the submarine boat could then often emerge to the surface to make observations and recoup fresh air. There seems, however, to be no suggested difficulty about finding the necessary pools; it is true that he mentions electric search-lights *pour reconnaître les écueils ou îlots sous-marins*, but it would be distinctly awkward for those on board if no openings were found. The navigation also would not be an easy matter, since we know very little about the variation of the compass in these regions. The writer, M. Pence, seems, however, to be aware of the fact that greater progress must be made in the building and management of submarine boats before any such attempt could be seriously carried out; but it appears to us that the proper place for such a boat would be in deep water, especially free from shallows and ice, and not rendered incapable of rising to the surface by the intervention of ice perhaps yards thick.

THE additions to the Zoological Society's Gardens during the past week include a Rhesus Monkey (*Macacus rhesus*) from India, presented by Mr. W. J. Drake; two Brown Capuchins (*Cebus fatuellus*,) from Guiana, presented by Mr. Walter Hammond; a White-crowned Mangabey (*Cercocebus æthiops*), a Diana Monkey (*Cercopithecus diana*) from West Africa, presented by Captain B. Parmeter; two Chacma Baboons (*Cynocephalus porcarius*) from South Africa, presented, respectively, by Mr. Herbert Blair and Mrs. Matcham; a Black-headed Lemur (*Lemur brunneus*) from Madagascar, presented by Mr. T. Cubitt; a Lioness (*Felis leo*) from Arabia, presented by Mr. C. A. Osborne; three Chipping Squirrels (*Tamias asiaticus*) from Washington State, U.S.A., presented by Mr. Alfred E. Speer; four Common Quails (*Coturnix communis*) from North Africa, presented by Mr. J. Rooney; a Tawny Owl (*Syrnium aluco*), British, presented by Mr. C. A. Lowes; a Little Grebe (*Tachybaptes fluviatilis*), British, presented by Mr. Howard Bunn; two Salt-water Terrapins (*Clemmys terrapin*) from North America, presented by Master and Miss Wilcox; two Dwarf Chameleons (*Chamæleon pumilus*) from South Africa, presented by Mrs. Robinson; a Common Hare (*Lepus europæus-albino*), European; a Two-wattled Cassowary (*Casuarius bicarunculatus*) from the Aroo Islands, a Naked-throated Bell Bird (*Chasmorhynchus nudicollis*) from Brazil, a Levaillant's Cynictis (*Cynictis levaillanti*), a White-crested Touracou (*Corythaix albocristata*) from South Africa, three Maguari Storks (*Ciconia maguari*) from Chili, deposited; a Spotted Cavy (*Cœlogenys paca*) from South America, a Viverrine Cat (*Felis viverrinæ*) from India, an Ariel Toucan (*Ramphastos ariel*) from Brazil, purchased; two Pumas (*Felis concolor*), born in the Gardens.

OUR ASTRONOMICAL COLUMN.

THE RECENT SOLAR ECLIPSE.—Prof. H. Geelmuyden communicates to *Astr. Nachr.*, No. 3378, some of the observations made at this eclipse. M. Schroeter, of the Observatory of Christiania, noted the time of the arrival of the shadow from his station near Vadsö as 16h. 57m. 0·5s. Central European time, with an error of ±0·5s., the end of totality occurring at 16h. 58m. 41s. with a possible error of several seconds. He remarks also of the "peu d'obscurité" during totality. In spite of the clouds, he says he could read and write without difficulty at a distance of 50 cm., and could follow the seconds hand on the face of his chronometer, placed at a distance of 1·4 metres. This, however, was not the experience of the observers across the Varanger Fjord on the island at Kiö. The eclipse, as observed there, was described by general consent as an exceedingly dark one, and the timekeepers, with stop watches and chronometers, all required some kind of artificial illumination. M. Mohn, who was in Finmarken to inspect the meteorological stations, was situated at Bugönes, on the southern side of the Varanger Fjord. He remarks that during totality he could read the smallest letters of a journal. One of the fortunate observers, M. Lous, was stationed near Bodö on the summit of a mountain, Hegmotind (lat. 67° 25′, long. 14° 58′ E. of Greenwich, height about 500 metres). He used a small telescope by Plössl, aperture 26 mm., magnifying 14 times. After totality was over he made a sketch of the corona, from which the following description has been gathered. The angles referred to below are measured from the top in the ordinary way.

From 350° to 50° and around 180° the size of the corona was 16′. From 50° to 130° or 140° there was an extension of 30′, divided by a radial suppression between 80° and 90° inclined towards the inner corona. From 280° to 350° were two tufts meeting at their bases nearly at 310°, and both pointed at their exterior edges; the largest extension of one was 36′ between 290° and 300°, the other rose to 50′ between 330° and 340°. The latter was nearly vertical. These red prominences were seen at 75°, 100°, and at 280°, the last being visible to the naked eye. The above numbers are only approximate.

One of the party of astronomers who went out to Japan to observe the eclipse, has communicated an article to the *Times*, from which we make the following summary. Akkeshi Bay was the spot finally settled upon for making the observations, this place being situated on the island of Yezo, and lying somewhat to the north of Kushiro. H.M.S. *Humber* conveyed the party thither, and on their arrival they found that there were already five ships anchored in the bay, including the flagship *Centurion.* On landing it was discovered that Prof. Schaeberle, accompanied by Mr. Charles Burckhalter and two amateur astronomers, had already taken up their positions at a tea-house in the village, the instruments having been set up in the garden. Prof. Schaeberle's 40-feet telescope "was propped up against a rock, which seemed to have been providentially placed there for him." Our *confrères* determined to follow their example, and they consequently established themselves at another tea-house, and "we never saw reason to regret this choice." Prof. Shin Herayama was similarly situated about a mile away in a third tea-house. Passing over the description of the erection of the instruments, and other facts mentioned in the article, we come to the following account of the eclipse. "All, in fact, went well, and even merrily, until the fatal day, which was gloomy throughout. The sun did show himself at noon, and at intervals afterwards, but twenty minutes before totality the clouds shot down finally. Not a vestige of the corona was seen. The sky grew suddenly dark, of course,